



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,225	01/30/2004	Canfeng Lai	A5152D1/T39510	9575

57385 7590 11/10/2005

TOWNSEND AND TOWNSEND AND CREW LLP / AMAT  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT	PAPER NUMBER
----------	--------------

1763

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/769,225

Applicant(s)

LAI ET AL.

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-21 and 53-62 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 59-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-20 and 53-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 18-21, 53-62 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0104, 0404</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 18-20 and 53-58, drawn to an apparatus, classified in class 156, subclass 345.48.
- II. Claims 21 and 59-62, drawn to a method, classified in class 438, subclass 710+.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as a process in which only one substrate is processed.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Patrick M. Boucher on 11/02/05 a provisional election was made without traverse to prosecute the invention of group I, claims 18-20 and 53-58. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21 and 59-62 are withdrawn from further

Art Unit: 1763

consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). See the non-initialed and non-dated alteration for the citizenship of the first inventor.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 1763

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18-20, 53-54 and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Shun'ko, US 6,392,351.

Shun'ko shows the invention as claimed including a plasma processing system comprising: a first substrate support structure configured to hold a first substrate 105 in the processing chamber; a second substrate support structure configured to hold a second substrate 107 in the processing chamber; and a transformer-coupled plasma generator within the processing chamber disposed between the first substrate support structure and the second substrate support structure; wherein the transformer-coupled plasma generator includes a plurality of toroidal transformer cores and comprises a plasma generating plate having the plurality of transformers cores 114/116, 114a/116a within the plasma generating plate and a plurality of through holes 110/112, 110a/112a, forming conduits from a first side of the plate to a second side of the plate; wherein the first and second substrate support structures are substantially parallel; wherein a plane of the toroidal transformer core is substantially parallel to the first and second substrate support; wherein the plasma generating plate is flat; wherein the toroidal core comprises a ferrite material; wherein the plasma generating plate includes a dielectric spacer 111/113 between the first side and the second side, and a remainder of an outer surface of the plasma generating plate comprises an electrical conductor. For a complete description of the apparatus see, for example, figs. 6 and 6a, and their descriptions.

Art Unit: 1763

Claims 18-20, 53-54 and 56-58 are rejected under 35 U.S.C. 102(e) as being anticipated by Godyak, US 2003/0015965.

Godyak shows the invention as claimed including a plasma processing system comprising: a first substrate support structure configured to hold a first substrate 265a in the processing chamber; a second substrate support structure configured to hold a second substrate 265b in the processing chamber; and a transformer-coupled plasma generator within the processing chamber disposed between the first substrate support structure and the second substrate support structure; wherein the transformer-coupled plasma generator includes a plurality of toroidal transformer cores and comprises a plasma generating plate having the plurality of transformers cores 262a/262b/262c/262d within the plasma generating plate and a plurality of through holes forming conduits from a first side of the plate to a second side of the plate; wherein the first and second substrate support structures are substantially parallel; wherein a plane of the toroidal transformer core is substantially parallel to the first and second substrate support; wherein the plasma generating plate is flat; wherein the toroidal core comprises a ferrite material; wherein the plasma generating plate includes a dielectric spacer between the first side and the second side, and a remainder of an outer surface of the plasma generating plate comprises an electrical conductor. For a complete description of the apparatus see, for example, figs. 7a and 7b, and their descriptions, and paragraphs 0017-0032 and 0084-0085.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shun'ko, US 6,392,351.

Shun'ko is applied as above but does not expressly disclose that the transformer core further includes a second conduit not passing through a transformer core. However, a prima facie case of obviousness still exists because it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the conduits of the plasma generator during routine experimentation depending upon, for example, the desire plasma density and/or the desire plasma density distribution,

Art Unit: 1763

and would not lend patentability to the instant application absent the showing of unexpected results.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Godyak, US 2003/0015965.

Godyak is applied as above but does not expressly disclose that the transformer core further includes a second conduit not passing through a transformer core. However, a prima facie case of obviousness still exists because it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the conduits of the plasma generator during routine experimentation depending upon, for example, the desire plasma density and/or the desire plasma density distribution, and would not lend patentability to the instant application absent the showing of unexpected results.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 571-272-1430. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

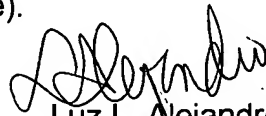
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone



Art Unit: 1763

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Luz L. Alejandro  
Primary Examiner  
Art Unit 1763

November 8, 2005